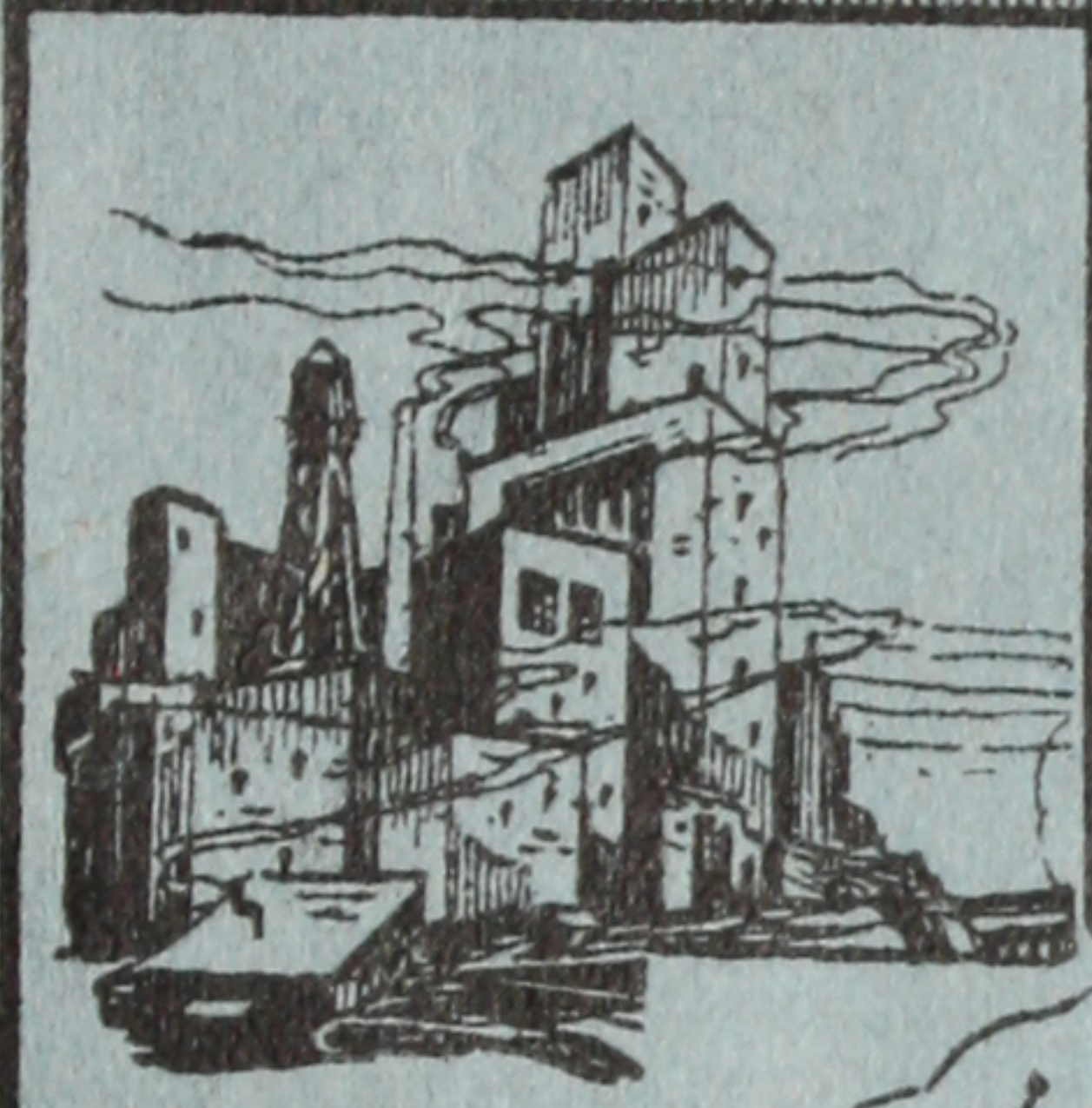


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QUAD

LIGHTING UNITS



*Industrial
and*

Commercial
Catalog No. 2

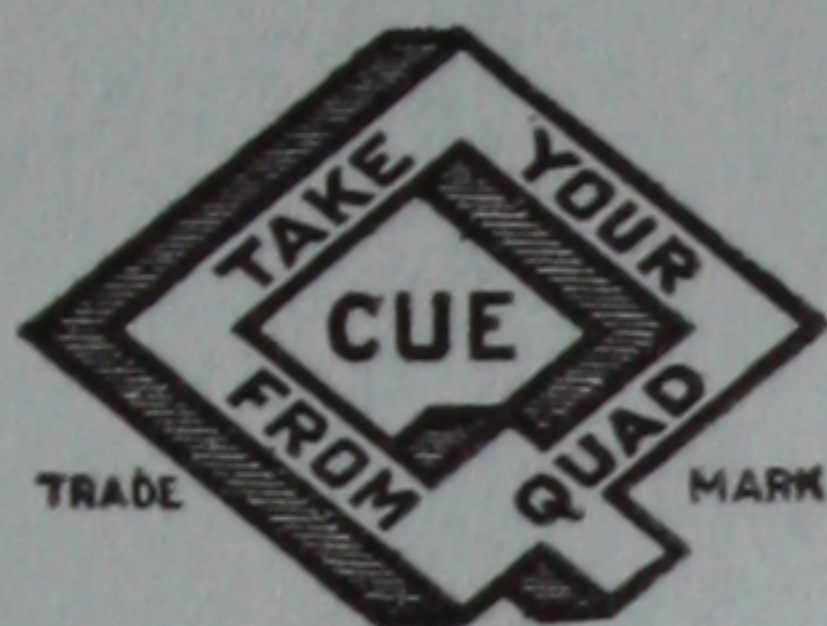


Contractor-Dealer Central Station Discounts

TELEPHONE
FRANKLIN 2163

APPLYING TO CATALOG No. 2

Effective May 1, 1925



Contractor-Dealer Discounts will be allowed to Electrical Contractors and Dealers; Industrial Plants maintaining an electrical department; Railways and Shipping Companies; and to National, State and Municipal Governments.

CLASS A Commercial Lighting Units Pages 14, 15 and 16	<div>Contractor Dealer</div> <div>4 Units or less..... 30%</div> <div>5 to 11 Units 33%</div> <div>12 to 49 Units 38%</div> <div>50 or more Units..... 40%</div>
CLASS B Porcelain Enameled Reflectors and Fittings Pages 6 to 13 Inclusive	<div>Contractor Dealer</div> <div>Less than 10 pieces..... 5%</div> <div>10 to 49 pieces 23%</div> <div>50 to 99 pieces 27%</div> <div>100 or more pieces..... 30%</div>
CLASS C Steel Swivel Hangers Page 13 Fixture Parts Page 14 and Receptacles Page 18	<div>Contractor Dealer</div> <div>Less than 10 of one kind.. 31%</div> <div>10 to 99 pieces 42%</div> <div>100 to 499 pieces 46%</div> <div>500 or more pieces..... 47%</div>
CLASS D Kitchen Units Page 17	<div>Contractor Dealer</div> <div>Less than 12 of one kind 40%</div> <div>12 to 99 Units..... 52%</div> <div>100 or more Units..... 53%</div>

GENERAL INFORMATION

Prices—All prices are F. O. B. Cars, Chicago. **Returned Goods** will not be accepted for credit unless our permission to return same is first obtained.

Terms—30 days net, or 2% 10 days from date of invoice.

No Packing Charge will be made.

Breakage—All materials are inspected and carefully packed. Claims for breakage must be made to the transportation Company.

Minimum Charge on any order entered will be 75c.

Quantity Discounts apply only to materials of the same class. Various types and sizes of reflectors may be assorted to make up a quantity but fittings or fixtures may not be combined with reflectors. Full cartons of receptacles may be assorted to make up a quantity.

Contractor-Dealer Central Station Discounts

APPLYING TO CATALOG No. 2

Effective May 1, 1935

Contractor-Dealer Discounts will be allowed to Electrical Contractors and Dealers (Industrial Plants including an
and in National, State and Municipal Governments



CONTRACTOR-DEALERS NOTICE!

This sheet gives your net
cost and should be
removed before leaving
this catalog with your
customer.

Quadrangle Mfg. Co.
553 W. Monroe St.
CHICAGO, ILL.

GENERAL INFORMATION

Prices—All prices are F. O. B. Cars. Returned Goods will not be accepted for credit unless our permission to return same is first obtained.

Terms—30 days net or 10% 10 days discount date of invoice.

No Packing Charge will be made.

Breakage—All materials are guaranteed and carefully packed. Claims for breakage must be made to the nearest National Company.

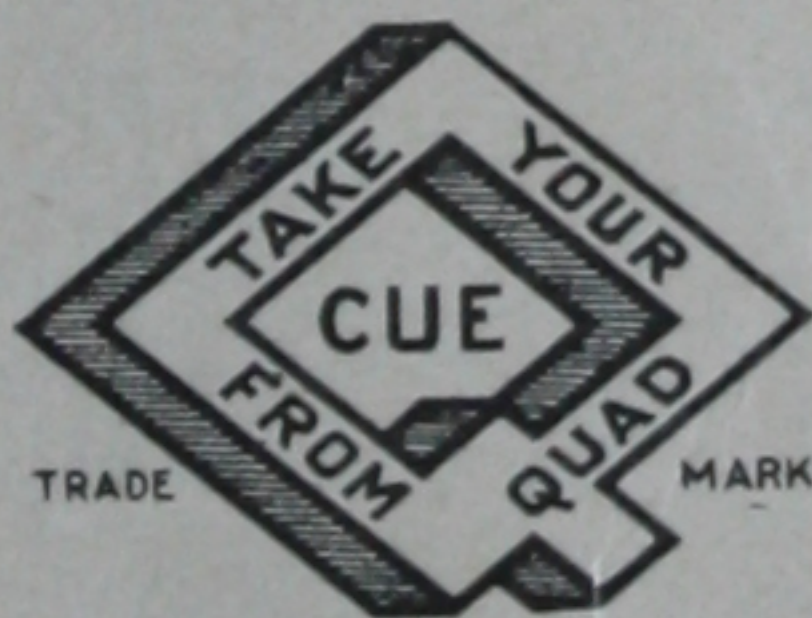
Minimum Charge on any order shipped will be \$50.

FOREWORD

The electric lighting equipment listed in the following pages is limited to a few standardized lines designed to meet practically every need of industrial and commercial illumination.

No effort is made to offer a large variety but rather to list such a range of styles and sizes as is consistent with producing lighting units of real quality at competitive prices.

Confident of the superiority of Quad lighting units, yet having no desire to convince by printed words, the Quadrangle Mfg. Co. invites requests for samples on approval.



Telephone Franklin 2163

QUADRANGLE MFG. CO.

553 West Monroe Street
CHICAGO

10 91-B83 TCF

General Illumination

Method of Finding Lamp Size

ASIDE from personal tastes and preferences there are certain fundamentals of illumination which should govern the selection of lighting equipment.

As a basis of calculation it is necessary to determine the following points:

Area, number of square feet in space to be lighted.

Intensity, indicated in foot candles Table 1.

Outlets, the number depending on the proportions of the room. The mounting height and spacing distance given in Table 2 produce the most uniform distribution of light but are not always practical.

Per cent of light utilized depends on style of unit selected and on size of room and mounting height, see Table 3.

Depreciation must be considered if proper intensities are to be maintained when dust accumulates and lamps lose their original brilliancy. For dusty locations or where cleaning is infrequent use the factor 1.5 and for fairly clean locations use 1.3 as a factor.

Having determined the five points listed above, the values found may be substituted for the symbols and the following formula used:

Symbols

Let A = Area of space
I = Intensity desired
O = Number of outlets
P = Per cent of light utilized
D = Depreciation factor

Formula

$$\frac{A \times I \times D}{O \times P} = \text{Lumens required at each outlet}$$

From Table 4 select the lamp having a lumen output most nearly equal to the result of the formula. This is the lamp to use.

Calculating Intensities

When the lamp size is given and it is desired to find the resulting intensities the following formula should be used:

Let L = Lumen output of lamp and use other symbols as listed above.

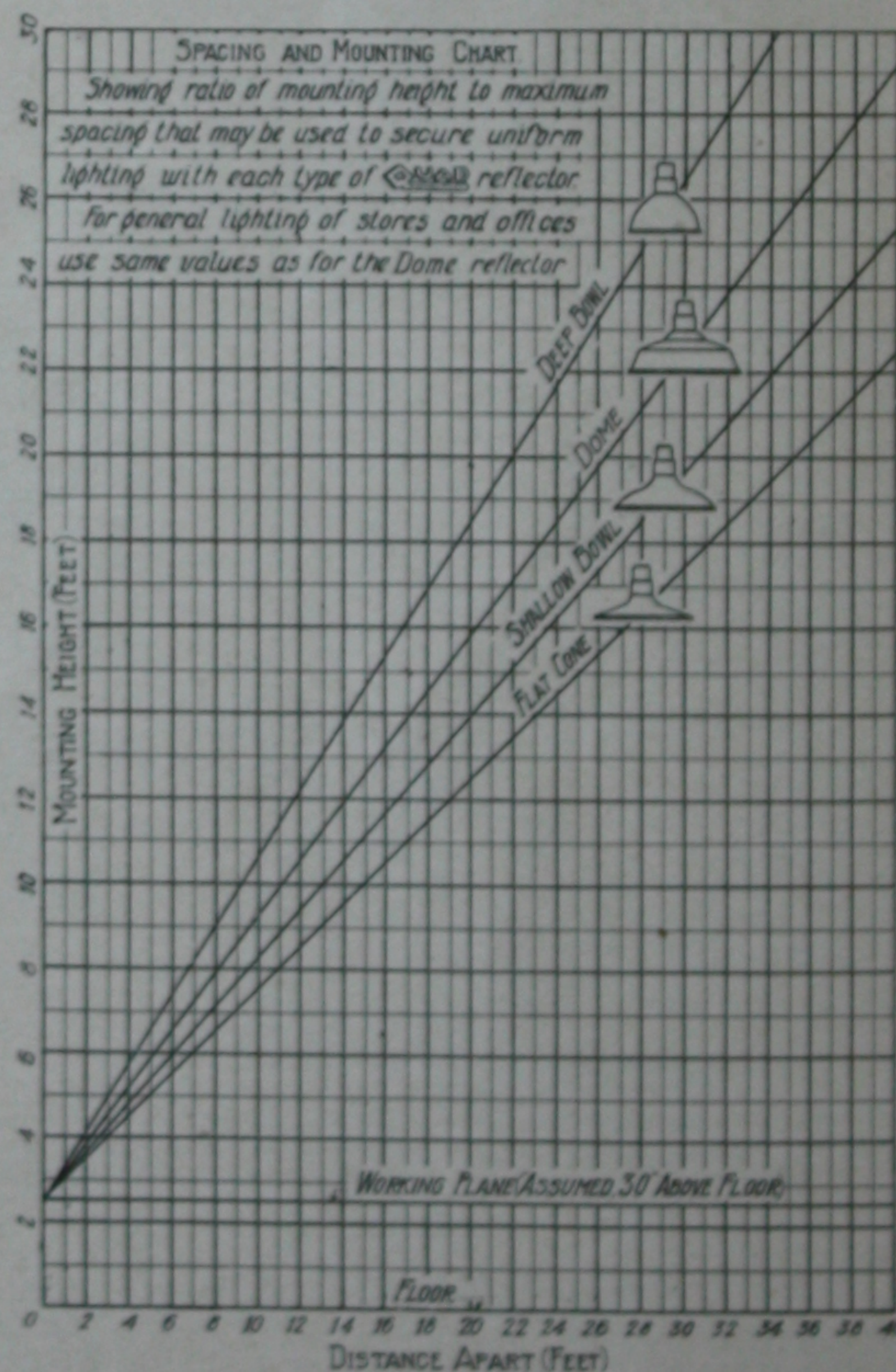
$$\frac{O \times P \times L}{A \times D} = \text{Intensity (foot candles) on working plane.}$$

Table 1

Recommended Foot Candle Intensities

Auditorium..... 3	Office Buildings:
Armory..... 5	Offices..... 5-8
Bank..... 6	Corridors..... 3
Canning Foods..... 8	Lobby..... 5
Cloth Products:	Paint Shop:
Light Goods..... 10	Dipping, Spraying... 5
Dark Goods..... 15	Fine Finishing..... 10
Dairy Products..... 6	Extra Fine Furniture. 15
Drafting Rooms..... 10	Printing:
Foundry:	Press Room..... 8
Rough Molding..... 6	Composing Room... 12
Fine Molding..... 10	Restaurant..... 5
Gymnasium..... 5	School..... 5
Hospital:	Store:
Ward..... 3	1st Floor..... 10
Operating Room.. 10-50	Other Floors..... 6-8
Machine Shop:	Textile Mills:
Rough Work..... 6	Weaving Light Goods. 12
Ordinary Work..... 10	Knitting Machines... 10
Fine Work..... 15	Wood Working..... 5-8

Table 2



General Illumination

Method of Calculating Intensities

Table 3

DIRECT		MOUNTING HEIGHT (FEET) ABOVE WORK'G PLANE											ENCLOSING		MOUNTING HEIGHT (FEET) ABOVE WORK'G PLANE										
SIZE OF ROOM	AREA SQ. FEET	4	5	6	7	8	10	16	30	4	5	6	7	8	10	16	30	4	5	6	7	8	10	16	30
10x10	100	49	45	42	34	34	34	-	-	31	28	25	20	20	20	-	-								
12x12	144	52	49	45	42	42	34	-	-	34	31	28	25	25	20	-	-								
14x14	196	52	52	49	45	42	34	-	-	34	34	31	28	25	20	-	-								
16x16	256	57	52	49	49	45	42	34	-	38	34	31	31	28	25	20	-								
20x20	400	61	57	52	52	49	45	34	-	41	38	34	34	31	28	20	-								
24x24	576	63	61	57	52	52	49	42	-	43	41	38	34	34	31	25	-								
30x30	900	66	63	61	57	57	52	45	34	47	43	41	38	38	34	28	20								
35x35	1225	66	63	63	61	57	52	45	34	47	43	43	41	38	34	28	20								
40x40	1600	67	66	63	63	61	57	49	34	49	47	43	43	41	38	31	20								
50x50	2500	67	67	66	66	63	61	52	42	49	49	47	47	43	41	34	25								
70x70	4900	67	67	67	67	66	63	57	49	49	49	49	49	47	43	38	31								
100x100	10000	67	67	67	67	67	63	52	49	49	49	49	49	49	49	43	34								
120x120	14400	67	67	67	67	67	66	57	49	49	49	49	49	49	49	47	38								

Table 4

Lumen Output and Other Characteristics of Mazda C Lamps

Watts	Lumen Output	Diam.	Over all Lgth.	Fila-ment Lgth.	Screw Base
	110v	220v	Ins.		
75	865		2 3/4	6 1/8	4 5/16 Medium
100	1260	995	3 1/8	7 1/8	5 3/16 Medium
150	2040		3 1/8	7 1/8	5 3/16 Medium
200	3100	2520	3 3/4	8 3/8	6 Medium
300	4840	4100	4 3/8	9 3/4	7 Mogul
500	8750	7850	5	10	7 Mogul
750	12900		6 1/2	13 3/8	9 1/2 Mogul
1000	19300	17500	6 1/2	13 3/8	9 1/2 Mogul

Example

A Men's Furnishing Store on a business street is to be lighted with Enclosed Units. The room is 48 feet wide by 51 feet long with 12 foot ceiling, decorating is of fairly light color.

Referring to Table 1 we find that the intensity of light recommended for stores is from 6 to 10 foot candles and since the merchandise handled is of dark color and the store is on a well lighted street 10 foot

candles should be used in order to compare favorably with neighboring stores.

Depreciation factor may be placed at 1.3 as fixtures will be cleaned frequently.

The area 2448 sq. ft. divides nicely into 16 bays with an outlet in the center of each bay which spaces the lighting units about 12 ft. apart.

Referring to the chart Table 2 we note that for stores the recommended ratio of mounting height to spacing is the same as for the dome type reflector and that fixtures spaced 12 ft. apart should be mounted 10 1/2 ft. above the floor or 8 ft. about the working plane.

From Table 3 we find that an Enclosing Unit in a room 50 x 50 ft. square delivers 43% of the light output to the working plane when mounted 8 ft. above.

We can now set down the values we have found, thus:

$$\begin{aligned}
 A &= \text{Area in square feet} = 2448. \\
 I &= \text{Intensity desired} = 10. \\
 D &= \text{Depreciation factor} = 1.3 \\
 O &= \text{Number of outlets} = 16. \\
 P &= \text{Per cent of light utilized} = .43
 \end{aligned}$$

Substituting the values for the symbols in our formula we have:

$$\frac{2448 \times 10 \times 1.3}{16 \times .43} = \frac{31824}{6.88} = 4625 \text{ Lumens required.}$$

In Table 4 we find that a 300 watt lamp has a lumen output of 4840 which most nearly equals the result of our formula. Hence a 300 watt type C lamp in a 16 inch enclosed bowl pendant mounted 10 feet above the floor is the lighting equipment to be recommended.



R. L. M. Standard Dome Reflectors

For Industrial Lighting



Facsimile of Label

Quadrangle dome reflectors bear the label reproduced here, showing that they are built to Reflector and Lamp Manufacturers (RLM) standard specifications, tested and certified by Electrical Testing Laboratories to be of correct design, high light output and first quality workmanship.

The distribution of light obtained with these reflectors is recognized by lighting authorities as the most satisfactory for uniform general illumination.

For recommended ratio of mounting height to spacing distance see table 2, page 4.

Dome Socket Reflectors

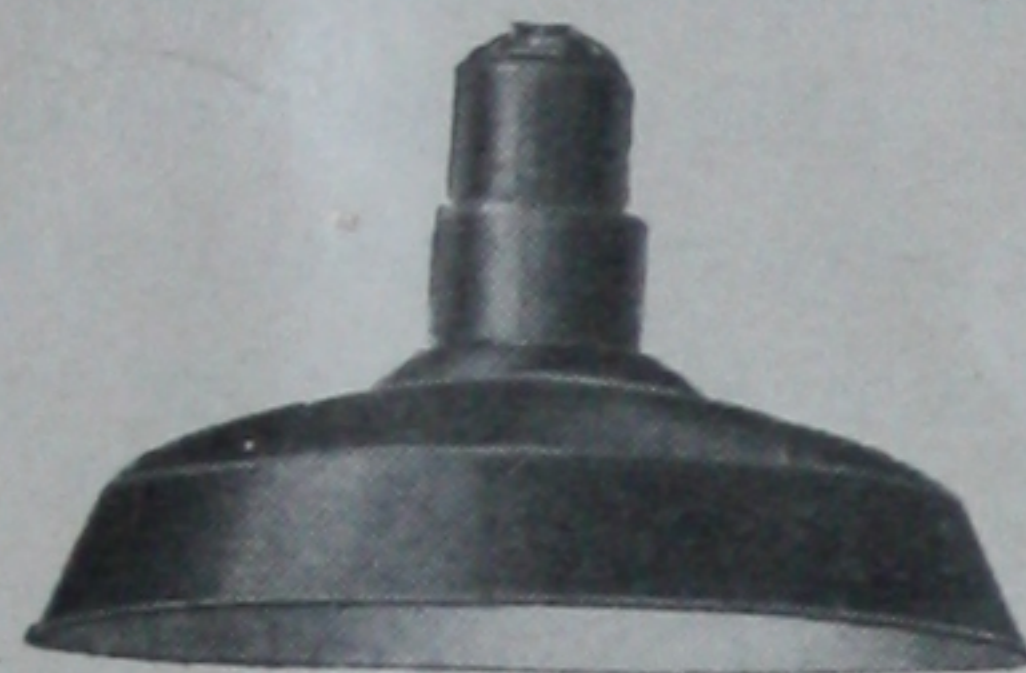
Reflector and Lamp Manufacturers (RLM) Standard

The dome socket reflector is accurately formed from the best grade of enameling steel. The neck or socket housing is electric welded to the reflector before enameling providing a one piece construction without exposed seam or bead.

It is porcelain enameled a reflecting white inside and black outside to conform with the usual black finish on conduit, boxes and other electrical fittings.

The socket is one piece porcelain mounted on brass rods like the sliding socket described on the opposite page except that it is non-adjustable. Socket may be removed from mountings for wiring simply by loosening two screws that are accessible from inside the reflector. Mogul sockets are furnished for 300 watt lamps or larger.

The weatherproof top fitting is cast brass tapped for $\frac{1}{2}$ inch conduit ($\frac{3}{4}$ inch if specified) and has a hex shoulder to prevent socket's twisting in the reflector. The locknut and offset washer are galvanized.



Socket Reflector
RLM Standard Dome

Cat. No.	Lamp	Diam.	Socket	Depth	Price
112	75w	12	Medium	8 $\frac{1}{2}$	\$2.85
114	100-150w	14	Medium	9	3.05
116	200w	16	Medium	10 $\frac{3}{8}$	3.70
118M	300-500w	18	Mogul	11 $\frac{1}{2}$	4.65
120M	750-1000w	20	Mogul	14 $\frac{1}{4}$	6.20

For medium pull socket and 6 ft. cord add to list \$0.70.

Dome Reflector Fitter Type

Reflector and Lamp Manufacturers (RLM) Standard

The fitter type dome reflector is so designed that when used with the form "O" 2 $\frac{1}{4}$ inch shade holder proper light distribution is obtained. The light cut-off angle is 17 $\frac{1}{2}$ degrees below horizontal as in other RLM reflectors.

Porcelain enameled black outside, white inside.

Cat. No.	Lamp	Diam.	Fitter	Depth	Price
1120	75w	12	2 $\frac{1}{4}$	5 $\frac{1}{2}$	\$1.60
1140	100-150w	14	2 $\frac{1}{4}$	6 $\frac{3}{4}$	1.90
1160	200w	16	2 $\frac{1}{4}$	7 $\frac{3}{4}$	2.25



Fitter Type Reflector
RLM Standard Dome

Dome Reflector Threaded Type

Reflector and Lamp Manufacturers (RLM) Standard

The threaded type reflector is identical with the fitter type above except that it is equipped with a threaded aluminum ring to fit Arrow or Bryant weatherproof copper or aluminum sockets listed on page 11. Prices include threaded ring attached but no sockets.

Cat. No.	Lamp	Diam.	Depth	Price
1121	75w	12	6	\$1.70
1141	100-150w	14	7 $\frac{1}{4}$	2.00
1161	200w	16	8 $\frac{1}{4}$	2.35

Class B

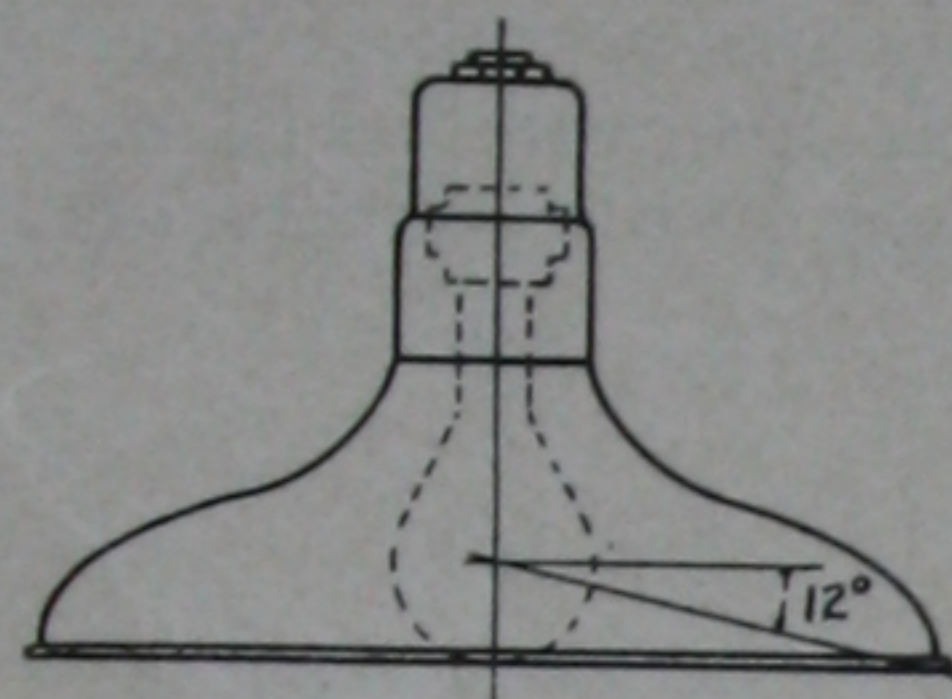


Threaded Type Reflector
RLM Standard Dome



Shallow Bowl Reflectors

For Industrial Lighting



Light Cut-off Angle

The Quadrangle shallow bowl reflector is designed for general illumination where outlets are spaced at such a distance as to require a slightly wider distribution of light than is obtained with the RLM dome. With this design the edge of the reflector intercepts the direct light at 12 degrees below the horizontal instead of at 17½ degrees as with the dome reflector.

Recommended ratio of mounting height to spacing distance is shown on page 4, table 2.

A careful check is maintained on workmanship and the quality of enamel.

Shallow Bowl Socket Reflectors

This shallow bowl socket reflector from the standpoint of usefulness and flexibility presents a very decided advantage over other reflectors of this style.

It is equipped with a one-piece porcelain *sliding socket* that may be adjusted vertically to serve lamps of different filament length. Position of socket may be changed at any time without disturbing the connected wires. Note the *regular* and *alternate* lamp sizes listed for each reflector.

Porcelain enameled black outside, white inside. Regularly furnished tapped for ½-inch conduit or with ¾-inch pipe thread if specified.



Shallow Bowl
Socket Reflector

Cat. No.	Lamp Size		Diam.	Socket	Depth	Price
	Regular	Alternate				
312	75w	100-150w	12	Medium	7⅞	\$2.55
314	100-150w	200w	14	Medium	8⅞	2.90
316	200w	100-150w	16	Medium	9	3.35

For medium pull socket and 6-ft. cord add to list \$0.70.

Shallow Bowl Reflectors

Fitter Type

When used with the form "O" 2¼-inch shade holder and lamp of size indicated the same distribution of light will be obtained as with the socket reflector of this style.

Porcelain enameled black outside, white inside.



Fitter Type Shallow
Bowl Reflector

Cat. No.	Lamp	Diam.	Fitter	Depth	Price
3100	25-60w	10	2¼	4⅞	\$1.05
3120	75w	12	2¼	4⅞	1.35
3140	100-150w	14	2¼	5¾	1.85
3160	200w	16	2¼	6½	2.20

Shallow Bowl Reflectors

Threaded Type

The threaded type reflector is identical with the fitter type except that it is equipped with a threaded aluminum ring to fit Arrow or Bryant sockets listed on page 11.

Prices do not include sockets.



Threaded Type Shallow
Bowl Reflector

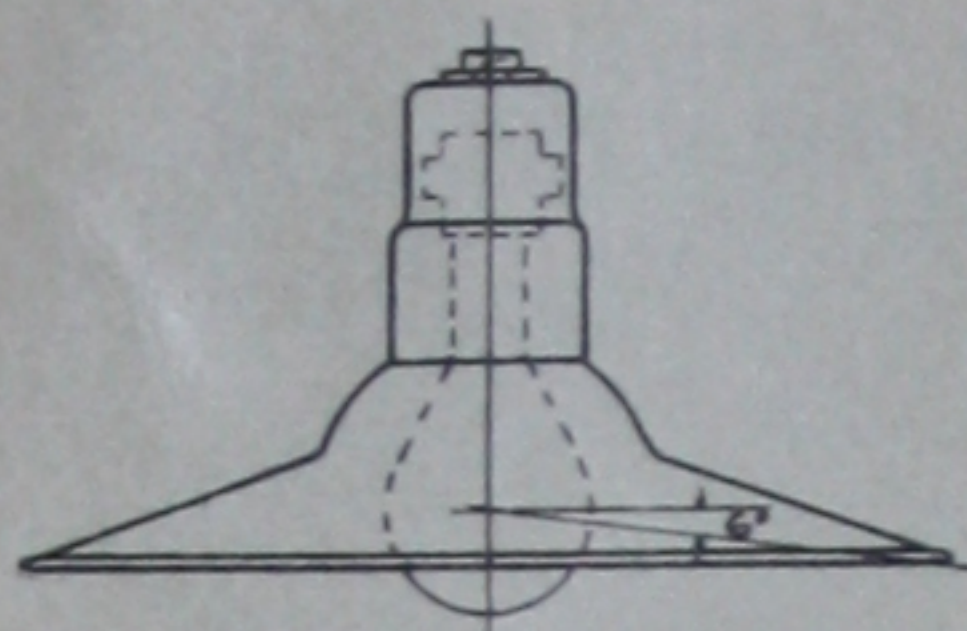
Cat. No.	Lamp	Diam.	Depth	Price
3101	25-60w	10	4⅞	\$1.20
3121	75w	12	4⅞	1.45
3141	100-150w	14	6¼	1.95
3161	200w	16	7	2.30

Class B



Flat Cone Reflectors

For Industrial Lighting



Light Cut-off Angle

The flat cone is especially adapted for the general illumination of yard and roadway and other areas where wide light distribution is desirable. The cut-off angle is 6 degrees from horizontal. See table 2 on page 4 for mounting and spacing data.

Flat Cone Socket Reflectors



Flat Cone
Socket Reflector

This unit like all other Quad socket reflectors (except RLM dome) has a sliding socket that permits the use of two sizes of lamps. For example, reflector No. 416 takes a 200 watt lamp when socket is set to the upper position and a 100 or 150 watt when socket is set in lower position. Mogul socket is one-piece, non-adjustable.

Porcelain enameled black outside, white inside.

Regularly furnished with brass fitting for $\frac{1}{2}$ -inch pipe or for $\frac{3}{4}$ -inch if specified.

Cat. No.	Lamp Size		Diam.	Socket	Depth	Price
	Regular	Alternate				
414	75w	100-150w	14	Medium	$7\frac{1}{8}$	\$2.75
416	100-150w	200w	16	Medium	$8\frac{1}{2}$	3.00
418	200w	.....	18	Medium	$9\frac{5}{8}$	3.40
418M	300-500w	.....	18	Mogul	$9\frac{5}{8}$	3.90

For medium pull socket and 6-ft. cord add to list \$0.70.

Flat Cone Reflectors

Fitter Type



Fitter Type Flat
Cone Reflector

Designed for use with standard $2\frac{1}{4}$ inch shade holder. Light cut-off 6 degrees below horizontal.

Porcelain enameled black outside, white inside.

Cat. No.	Lamp	Diam.	Fitter	Depth	Price
4120	75w	12	$2\frac{1}{4}$	3	\$1.35
4140	100-150w	14	$2\frac{1}{4}$	$3\frac{5}{8}$	1.85
4160	200w	16	$2\frac{1}{4}$	5	2.20

Flat Cone Reflectors

Threaded Type



Threaded Type Flat
Cone Reflector

These reflectors are just like the fitter type above with the addition of a threaded aluminum ring securely clinched over the heel or fitter. This ring fits the weatherproof aluminum or copper shell sockets made by Arrow, Bryant and others listed on page 11.

Prices do not include sockets.

Cat. No.	Lamp	Diam.	Depth	Price
4121	75w	12	$3\frac{1}{2}$	\$1.45
4141	100-150w	14	$4\frac{1}{8}$	1.95
4161	200w	16	$5\frac{1}{2}$	2.30

Class B



Deep Bowl Reflectors

For Industrial Lighting

Deep bowls are largely used for localized lighting or for high mounting as above a crane. The edge of the Quad deep bowl reflector cuts off the direct light at 25 degrees below the horizontal. For mounting height and spacing distance, see table 2, page 4.



Light Cut-off
Angle

Deep Bowl Socket Reflectors

In the deep bowl socket reflector the Quad sliding socket is particularly useful because it not only serves two sizes of lamp in the same reflector but by raising or lowering the socket two different distributions of light may be obtained with the same lamp. For example, reflector No. 210 with a 100 watt lamp and with the socket set in the upper position delivers a more concentrated light than with the same lamp when socket is lowered.

Porcelain enameled black outside, white inside.

Regularly furnished with brass fitting for $\frac{1}{2}$ inch pipe or for $\frac{3}{4}$ inch if specified.



Deep Bowl
Socket Reflector

Cat. No.	Lamp Size		Diam.	Socket	Depth	Price
	Regular	Alternate				
207	75w	25-60w	7	Medium	7 $\frac{3}{8}$	\$2.25
208	100-150w	75w	8	Medium	8 $\frac{3}{4}$	2.55
210	200w	100-150w	10	Medium	9 $\frac{3}{4}$	3.20
212M	300-500w	.....	12	Mogul	11 $\frac{3}{4}$	4.00

For medium pull socket and 6 ft. cord add to list \$0.70.

Deep Bowl Reflectors

Fitter Type

Designed for use with standard $2\frac{1}{4}$ inch shade holder. Light cut-off approximately 25 degrees below horizontal on all sizes.

Porcelain enameled black outside, white inside.



Fitter Type Deep
Bowl Reflector

Cat. No.	Lamp	Diam.	Depth	Price
2070	60-75w	7	4 $\frac{3}{8}$	\$1.20
2080	100-150w	8	6	1.30
2100	200w	10	6 $\frac{3}{8}$	1.80

Deep Bowl Reflectors

Threaded Type

These reflectors are like the fitter type above, with the addition of a threaded aluminum ring securely clinched over the heel or fitter. This ring fits the weather-proof aluminum or copper shell sockets made by Arrow, Bryant and others listed on page 11.

Prices do not include sockets.



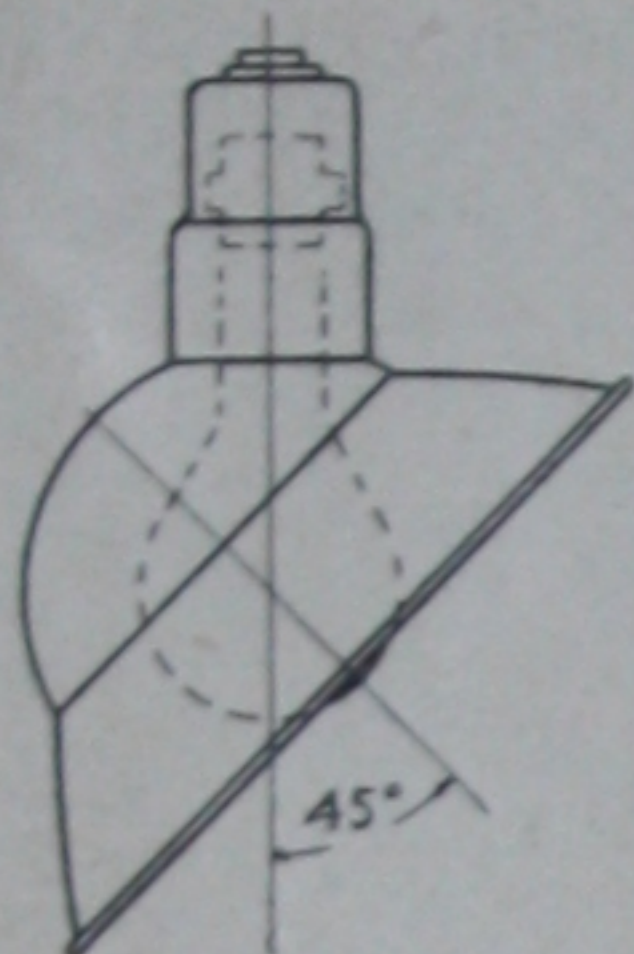
Threaded Type
Deep Bowl
Reflector

Cat. No.	Lamp	Diam.	Depth	Price
2071	60-75w	7	5 $\frac{3}{8}$	\$1.30
2081	100-150w	8	6 $\frac{3}{8}$	1.40
2101	200w	10	7 $\frac{3}{8}$	1.90

Class B

Angle Reflectors

For Signs and Industrial Lighting



Light
Distribution
Angle

This style of reflector is admirably suited to billboard and sign lighting. In practically all installations the portion of a billboard to be lighted by each reflector is higher than it is wide and the circle of light delivered by the round bowl of the Quad angle reflector striking the sign obliquely takes the form of an ellipse which evenly illuminates the desired area without spilling light at the side.

In industrial plants angle reflectors mounted on columns or side walls may be used to illuminate sections that are traveled by a crane or where other conditions render overhead lighting difficult.

Store windows present another class of lighting where a permanent, economical and very effective job may be done with porcelain enameled steel angle reflectors.

Angle Socket Reflectors



45 Degree Angle
Socket Reflector

These 45 degree angles are furnished with a sliding socket that permits a change of lamp size without necessitating the use of a different reflector. It is also very easy to obtain a different distribution of light by raising or lowering the socket in any reflector except when mogul socket is furnished.

The neck or socket housing is welded to the reflector in such a way as to avoid an exposed bead or raw edge either inside or outside the reflector.

Porcelain enameled white inside, black outside. Tapped for $\frac{1}{2}$ inch pipe or $\frac{3}{4}$ inch if specified.

Cat. No.	Lamp Size		Diam.	Depth	Socket	Price
	Regular	Alternate				
508	50w (mill type)	25-60w	8	8 $\frac{7}{8}$	Medium	\$2.50
510	75w	100-150w	10	11 $\frac{1}{4}$	Medium	3.35
512	100-150w	200w	12	13 $\frac{1}{4}$	Medium	3.60
514	200w	.....	14	15 $\frac{1}{2}$	Medium	5.15
514M	300-500w	.....	14	15 $\frac{1}{2}$	Mogul	5.65

For medium pull socket and 6 ft. cord add to list \$0.70.

Angle Reflectors

Fitter Type

Designed for use with standard 2 $\frac{1}{4}$ inch shade holder. The axis of light distribution is 45 degrees.

Porcelain enameled black outside, white inside.

Cat. No.	Lamp	Diam.	Depth	Price
5100	75w	10	8 $\frac{3}{8}$	\$1.50
5120	100-150w	12	9 $\frac{3}{4}$	2.00
5140	200w	14	12 $\frac{1}{4}$	2.50



Fitter Type
Angle Reflector

Angle Reflectors

Threaded Type

These reflectors are like the fitter type above, with the addition of a threaded aluminum ring securely clinched over the heel or fitter. This ring fits the weather-proof aluminum or copper shell sockets listed on page 11.

Prices do not include sockets.

Cat. No.	Lamp	Diam.	Depth	Price
5101	60-75w	10	8 $\frac{7}{8}$	\$1.60
5121	100-150w	12	10 $\frac{1}{4}$	2.10
5141	200w	14	12 $\frac{3}{4}$	2.60



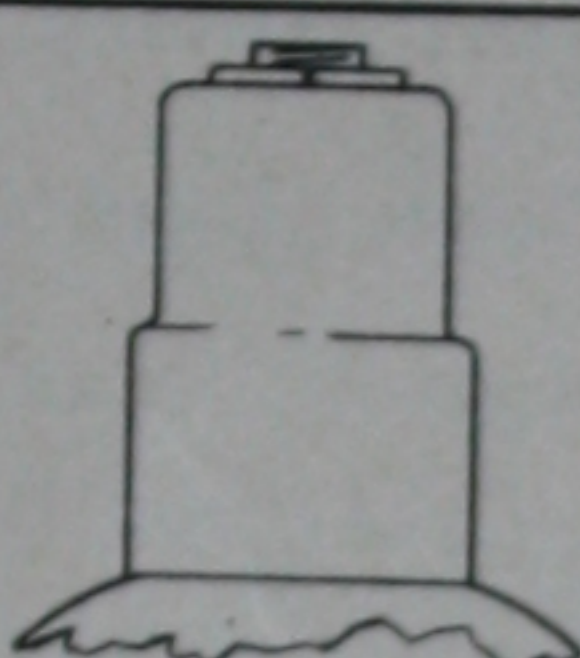

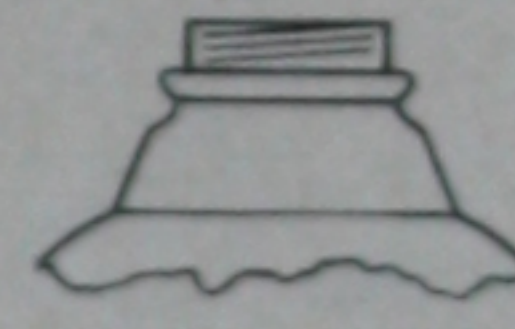
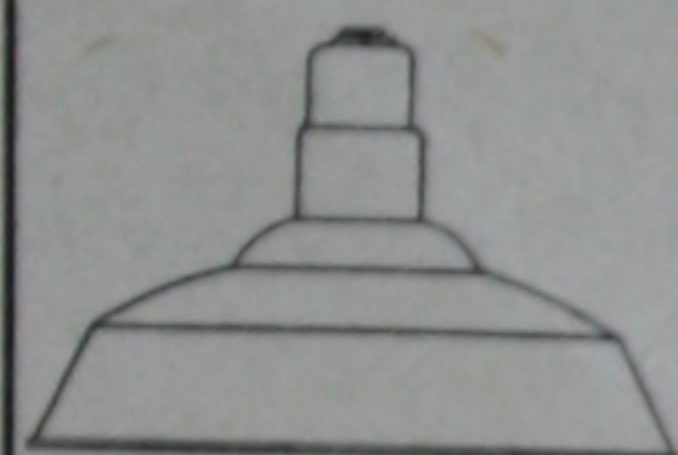
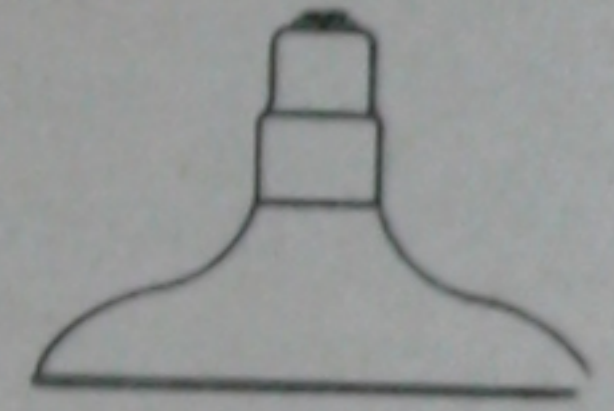
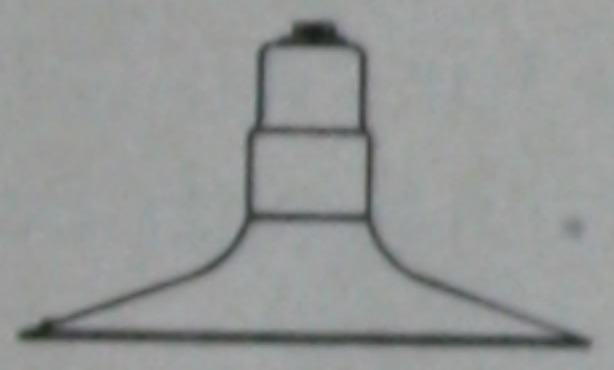

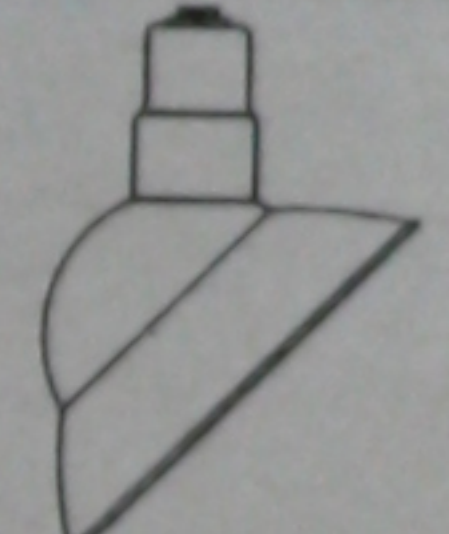
Threaded Type
Angle Reflector

Class B



General Reflector Index

Showing all Types, Shapes and Sizes

INDEX Reflector types and shapes indicated by catalog numbers.		 Socket Type threaded for 1/2-inch conduit.	 Fitter Type for standard 2 1/4-inch shade holder.	 Threaded Type for weatherproof sockets.
	Diam.	Cat. No. Lamp Price	Cat. No. Lamp Price	Cat. No. Lamp Price
 <i>RLM Dome—P. 6</i>	12	112 75w \$2.85	1120 75w \$1.60	1121 75w \$1.70
	14	114 100-150w 3.05	1140 100-150w 1.90	1141 100-150w 2.00
	16	116 200w 3.70	1160 200w 2.25	1161 200w 2.35
	18	118M 300-500w 4.65	...	...
	20	120M 750-1000w 6.20	...	...
 <i>Shallow Bowl—P. 7</i>	10	...	3100 25-60w 1.05	3101 25-60w 1.20
	12	312 75w 2.55	3120 75w 1.35	3121 75w 1.45
	14	314 100-150w 2.90	3140 100-150w 1.85	3141 100-150w 1.95
	16	316 200w 3.35	3160 200w 2.20	3161 200w 2.30
 <i>Flat Cone—Page 8</i>	12	...	4120 75w 1.35	4121 75w 1.45
	14	414 75w 2.75	4140 100-150w 1.85	4141 100-150w 1.95
	16	416 100-150w 3.00	4160 200w 2.20	4161 200w 2.30
	18	418 200w 3.40	...	...
	18	418M 300-500w 3.90	...	...
 <i>Deep Bowl—Page 9</i>	7	207 60-75w 2.25	2070 60-75w 1.20	2071 60-75w 1.30
	8	208 100-150w 2.55	2080 100-150w 1.30	2081 100-150w 1.40
	10	210 200w 3.20	2100 200w 1.80	2101 200w 1.90
	12	212M 300-500w 4.00	...	...
 <i>45° Angle—Page 10</i>	8	508 (mill) 50w 2.50	...	...
	10	510 75w 3.35	5100 75w 1.50	5101 75w 1.60
	12	512 100-150w 3.60	5120 100-150w 2.00	5121 100-150w 2.10
	14	514 200w 5.15	5140 200w 2.50	5141 200w 2.60
	14	514M 300-500w 5.65	...	...

Class B

The above chart shows the Quad Porcelain enameled reflector line, five shapes which are manufactured in the three types and various sizes listed. For detailed description refer to the page indicated in left-hand column.

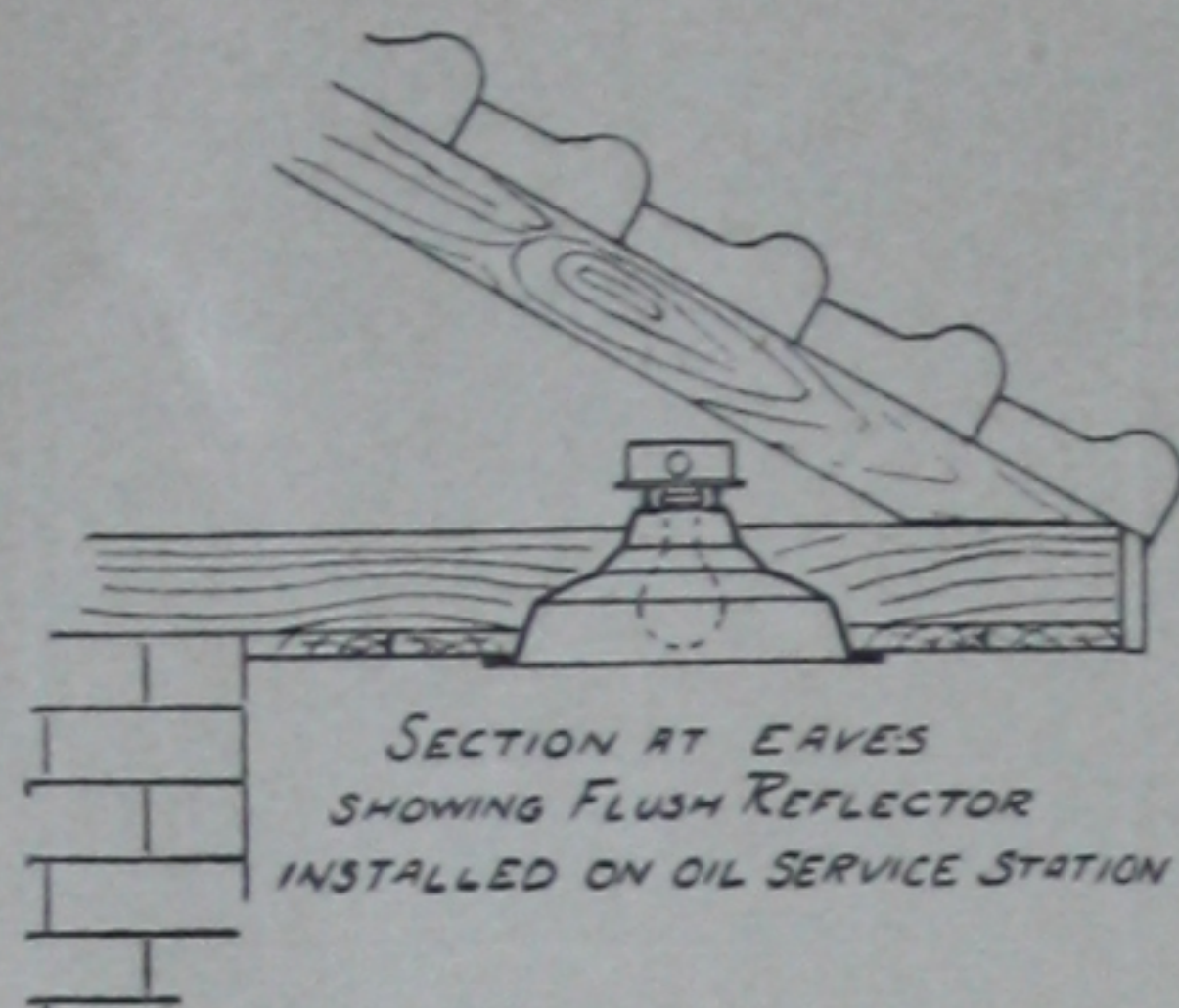
Hangers and other accessories for use with reflectors are shown on page 13.

Weatherproof Sockets

Threaded type reflectors may be used with the following weatherproof sockets:

Cat. No.	Arrow	Body
8120	Cap	Aluminum
8121	3/8-inch	Aluminum
8125	1/2-inch	Aluminum
	Cord Grip	
3706	Bryant	Aluminum
3707	3/8-inch	Aluminum
3708	1/2-inch	Aluminum
	Cord Grip	
841C	Freeman	Porcelain
851C	Pendant	Porcelain
852C	3/8-inch	Porcelain
	1/2-inch	
8096	Hart & Hegeman	Aluminum
8110	3/8-inch	Aluminum
	1/2-inch	

Outlet Box Reflectors



*Typical Installation of
Flanged Reflector*

Flanged Reflectors

For Flush Mounting

This reflector was designed especially for the illumination of gasoline filling stations but is also admirably suited to tunnel and subway work or any location where headroom is limited. The lower edge of the reflector is turned outward forming a flange one inch wide to conceal the irregular edge of the opening into which the reflector is set.

For the No. 2000 a 12½-inch opening should be provided, the receptacle mounted on an outlet box centered over the opening, the receptacle cover to be 5¼ to 6 inches from the surface of the ceiling. No. 4000 requires a 14½-inch opening, the receptacle to be mounted at a distance of from 6 to 7¼ inches above the ceiling.

The receptacle cover is drilled and tapped for two long adjusting screws the heads of which project through two keyholes in the top of the reflector.

Fits 4-inch box (furnished for 3-inch if specified), porcelain enameled black outside, white inside.



Flanged Reflector

Cat. No.	Lamp	Diam. (over Flange)	Opening Required	Mounting Distance	Price
2000	60-75w	14	12½	5¼ to 6	\$2.25
4000	100-150w	16	14½	6½ to 7¼	2.60
6000	200w	18	16½	7¾ to 8½	3.50

Without Flange

For Industrial Lighting

This reflector is identical with the style shown above except that the lower edge terminates in a rolled bead instead of a one-inch flange.

Recommended for close mounting work requiring medium size lamps.



Without Flange

Cat. No.	Lamp	Diam.	Depth	Price
2012	60-75w	12	5¼	\$1.95
4014	100-150w	14	6½	2.25
6016	200w	16	7¾	2.60

Class B



Reflector Fittings

For Industrial Lighting

For every reflector used some additional fittings are required. The standard hangers, flanges and cover shown below are of substantial design and material suitable for outdoor or industrial installations.



Steel Swivel Hanger

Steel Swivel Hanger

Made of 14 gauge steel, galvanized, with a cast iron ball threaded for $\frac{1}{2}$ inch conduit stem. Fits both 3 inch and 4 inch outlet boxes and will hang vertically even though the box is tilted 45 degrees.

This hanger provides a simple and economical method of hanging reflectors, especially suitable for open conduit work under sloping or saw-tooth roofs.

Cat. No.	Description	Price.
145G	Swivel Hanger	\$0.35



Bushes Hanger

Swivel Shock Absorber

The Swivel Shock Absorber is like the Swivel Hanger with the addition of a compression spring of proper tension to "float" any reflector and stem having a combined weight of from 2 to 10 pounds.

Cat. No.	Description	Price
145GA	Swivel Shock Absorber	\$0.60

Class C

Bushed Hanger

A porcelain bushed weatherproof hanger made of cast iron, hot galvanized finish with brass screws. Takes two No. 14 wires and is threaded for $\frac{1}{2}$ inch conduit stem.

Cat. No.	Finish	Price
54	Hot Galvanized	\$0.40



Cast Iron Swivel Hanger

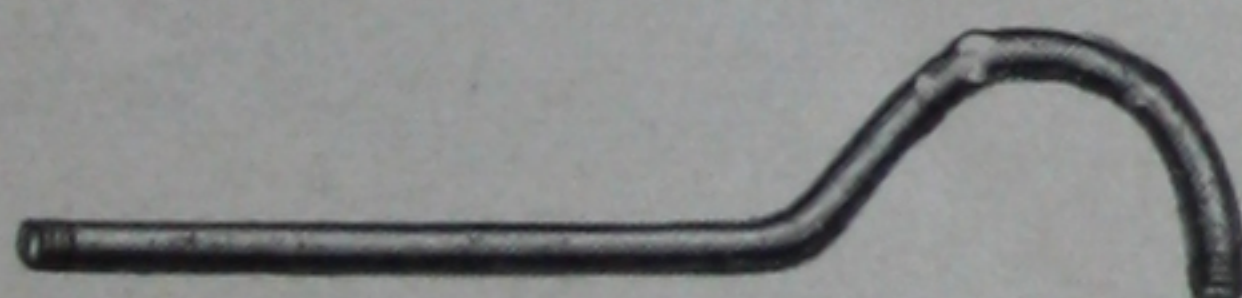
Cast Iron Swivel Hanger

A heavy duty 45 degree swivel hanger for use in plants where cast iron fittings are required to resist corrosion.

Fits 4 inch outlet box and is tapped for $\frac{1}{2}$ inch conduit.

Swivel hangers serve not only to align a row of reflectors but afford considerable protection by swinging freely when reflectors are struck.

Cat. No.	Finish	Price
45	Black Japanned	\$0.45
45G	Galvanized	.50



Gooseneck

Gooseneck and Flange

Standard gooseneck is of $\frac{1}{2}$ galvanized conduit 30 inches long after bending. Special lengths made to order.

Flange is heavy cast iron, galvanized, with $\frac{1}{16}$ inch holes for pole or wall mounting. Threaded to take $\frac{1}{2}$ inch gooseneck. (Tapped for $\frac{3}{4}$ inch pipe if specified.)

Cat. No.	Description	Price
63	Gooseneck	\$0.80
64	Wall Flange	.35
65	Pole Flange	.35



Flange

Outlet Box Cover

A cover for mounting socket reflectors close to outlet box. Made of 14 gauge steel, offset and punched to fit 4 inch boxes.

Cat. No.	Finish	Price
66	Black Japanned	\$0.15



Cover

Class B



Commercial Lighting Units

For Stores and Offices



Chain Pendant

Chain Pendant

The enclosed bowl unit shown here is of cased glass in a slightly fancy pattern that has proved a very popular variation from the plainer commercial units.

Made only in the 16 inch size, it is especially recommended for stores and offices using 300 or 500 watt lamps. The chain hanger is identical with the pendant described on the opposite page. Standard finish is an electro-plated statuary bronze but may be had in brush brass if specified.

Cat. No.	Lamp	Bowl	Socket	Price
1631	100-200w	6 x 16	Medium	\$11.50
1631M	300-500w	6 x 16	Mogul	12.00

For pull switch and 6 foot cord, add to list \$1.25. Fixtures are furnished complete with wire, not wired. Extra chain and wire, \$0.25 per ft.

Ceiling Unit

This ceiling unit is companion to the pendant shown to the left, consisting of the same enclosed bowl in conjunction with a 22 gauge spun brass ceiling holder. Finish is electro-plated statuary bronze, brush brass if specified.

Cat. No.	Lamp	Holder	Bowl	Price
1634	200w	6 x 8½	6 x 16	\$11.25
1634M	300-500w	6 x 10	6 x 16	11.75

For switch control and 6 foot cord add to list \$1.00.

Class A



Mogul Socket

Fixture Parts

Mogul Socket

One piece glazed porcelain body, neat in appearance and of substantial construction. Cap is cast brass tapped for 3/8 inch pipe or fixture loop.

Cat. No.	Watts	Volts	Cap	Price
35	300-1500	600	3/8	\$0.75

Medium Socket

One piece porcelain with screw terminals at back mounted on brass rods swedged into a galvanized iron yoke tapped for 3/8 inch pipe. Socket may be adjusted up or down on rods to permit the use of two sizes of lamp in the same fixture.

The distance between upper and lower position of the socket corresponds very closely to the difference in filament lengths of the 75 watt and 100-150 watt or between the 100-150 watt and 200 watt lamps.

Cat. No.	Watts	Volts	Cap	Price
36	660	250	3/8	\$0.70



Medium Socket

Hickey

Malleable iron with ample wire ways.

Cat. No.	Description	Price
37	3/8 x 3/8 Blind Hickey	\$0.10
38	1/2 x 3/8 Open Hickey	.15



Malleable Hickey

Class C

Commercial Lighting Units

For Stores and Offices

Chain Pendants



Chain Pendant

The quality of the material used in these units is exceptionally good. The holder is $5\frac{3}{4}$ inches deep and is a full 22 gauge after forming. Substantial chain, heavy brass loop, patent stem, $6\frac{1}{2}$ -inch diameter canopy, mogul or medium socket and nitrogen wire, with the holder, make up a standardized pendant that may be specified with complete confidence.

Medium socket, described on page 14, provides for correct filament position of two sizes of lamp in each fixture.

Standard finish is an electro-plated statuary bronze that is better looking and more permanent than ordinary sprayed finishes.

Brush brass finish if specified.

Glassware is a light density opal and produces a well diffused light with little loss by absorption. Frequent photometric tests show a light output of from 85 to 90 per cent. The surfaces of the bowl are smooth with no crevices where dirt may lodge. The simple lines and pleasing proportions present a good appearance in any store or office.



Ceiling Unit

Lamp Size

Cat. No.	Regular	Alternate	Bowl	Price
1041	75w	60w	4x10	\$5.25
1241	100-150w	200w	6x12	6.40
1441	200w	100-150w	6x14	7.55
1641M	300-500w	.....	6x16	8.75

106—6-inch hanger with medium socket and no glass 3.20

For pull switch and 6 foot cord add to list \$1.25

For extra length chain and wire add to list \$0.25 per ft.

Ceiling Units

Ceiling units consist of glassware described above used with a 22 gauge spun brass holder plated statuary bronze. Complete with mogul or medium socket, wire and cross bar. A single screw acting against a phosphor bronze spring supports the bowl.

Cat. No.	Lamp	Holder	Bowl	Price
1044	75w	$8\frac{1}{2}$ x4	4x10	\$4.60
1244	100-150w	$8\frac{1}{2}$ x4	4x12	5.75
1444	200w	$8\frac{1}{2}$ x6	6x14	7.25
1644M	300-500w	10 x6	6x16	8.90

For switch control and 6-ft. cord add to list \$1.00

All fixtures furnished not wired

Class A

Ceiling Units and Brackets

Porcelain Enamel Steel

There are many lighting installations where a porcelain enamel finish is not only entirely in keeping with the surroundings but is actually better than any other.

In restaurants, dairies, bakeries and other places where food is handled these pure white lighting units are particularly desirable on account of their sanitary appearance and cleanability. Hospitals, store basements and office buildings also are using porcelain enameled lighting units with entire satisfaction.

Colored or tinted porcelain finishes furnished on special orders.



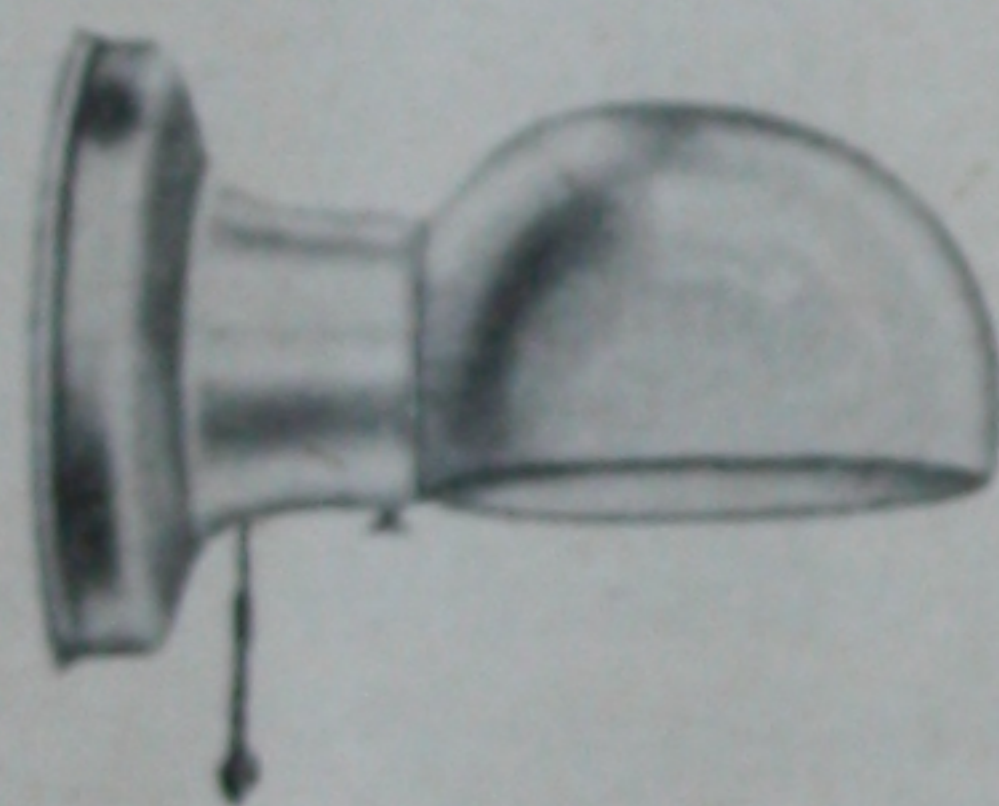
Ceiling Unit

Ceiling Units

These all white porcelain enameled units are of the same size and have same glassware as the statuary bronze ceiling units on the preceding page. Furnished complete with socket, wire and crossbar, not wired.

Cat. No.	Lamp	Holder	Bowl	Price
1047	75w	8½x4	4x10	\$4.15
1247	100-150w	8½x4	4x12	5.30
1447	200w	8½x6	6x14	6.65
1647M	300-500w	10 x6	6x16	8.40

For switch control and 6 foot cord add to list \$1.00



Bracket

Open Shade Units for Sidewalls and Ceilings

In corridors, stairways and wash rooms of public buildings, in hotels and in the bathroom or bedroom of the home these smaller porcelain enameled units may be used to good advantage.



Ceiling Unit

Cat. No.	Lamp	Holder	Shade	Price
527	25-60w	5½x2¼	Half Shade	\$2.30
537	25-60w	5½x2¼	6" Bowl	2.30

For switch control add to list \$1.00

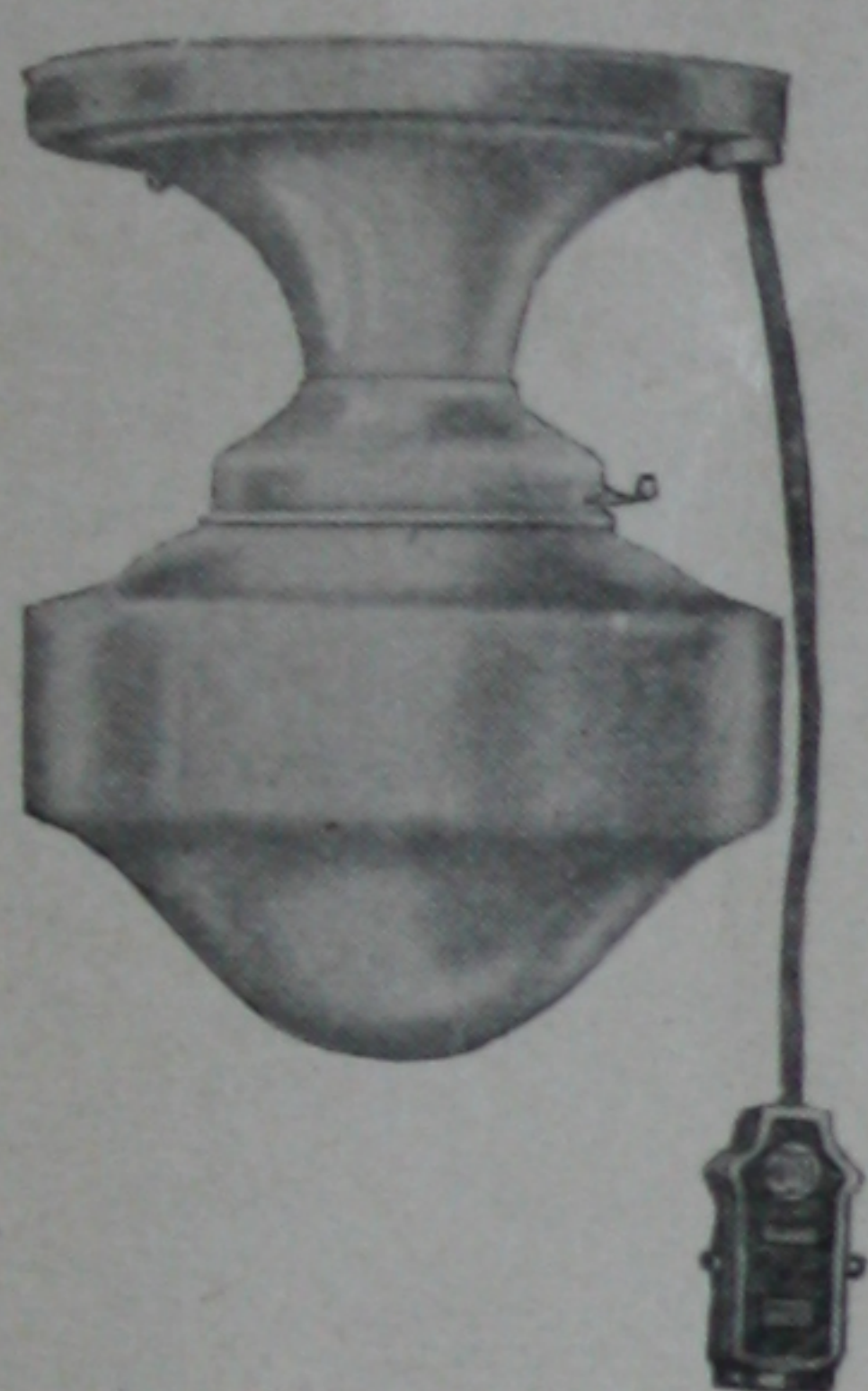
Class A



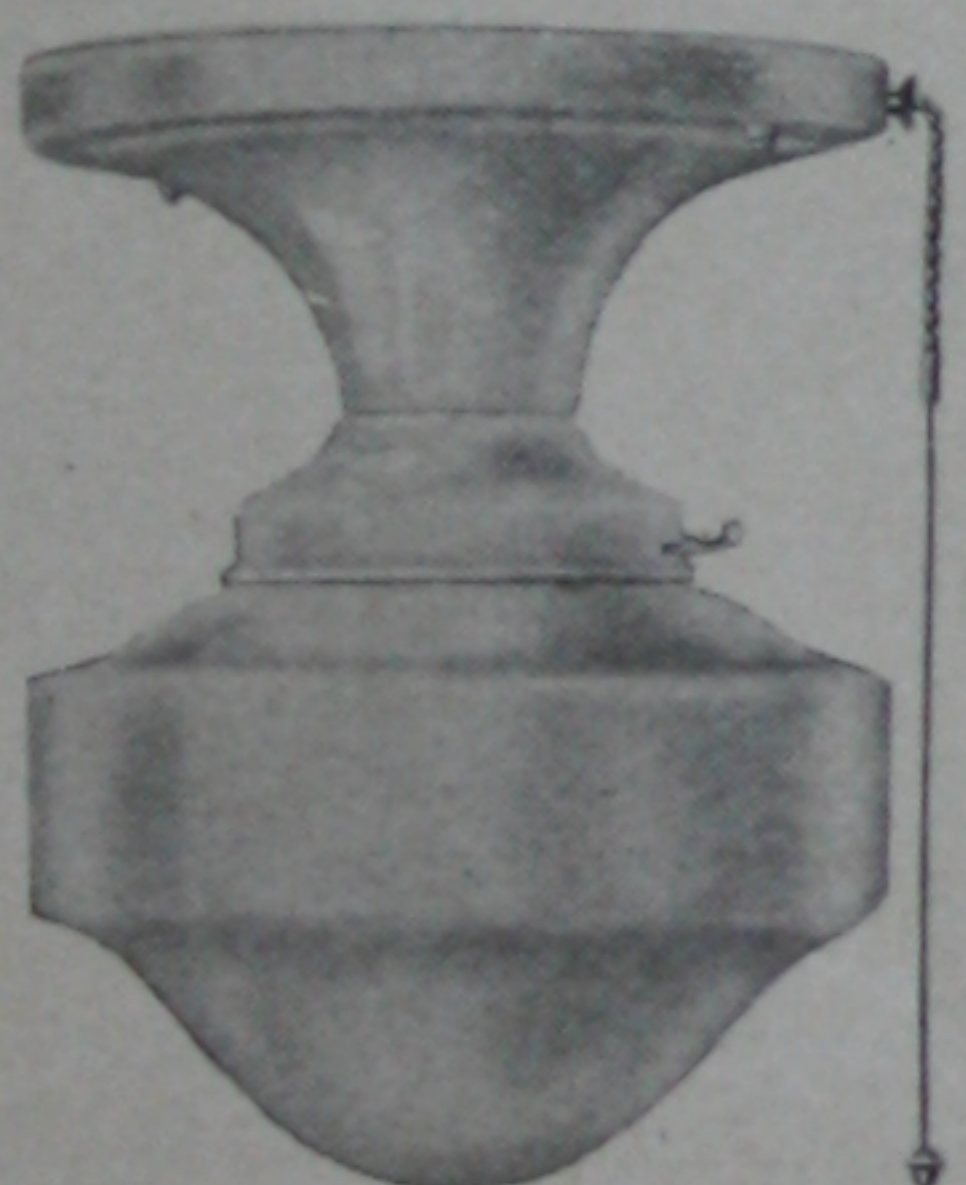
Kitchen Lighting Units

Porcelain Enamel Steel

Quad Kitchen Units with the handy Plug-in-Switch were originally developed for the home kitchen but with the addition of two other styles shown here, Keyless and Pull Socket, their field of usefulness was greatly extended. These units are now used in doctors' and dentists' offices, hospitals, barber shops, beauty parlors, apartment hotels, soda fountains and small stores.



No. 400C



No. 401C



No. 402C

The holder is permanently finished in white porcelain enamel. It is 8½ inches in diameter with a screwless holder that is automatically adjustable to take any globe having a 4-inch fitter. Also furnished with screw and wing nut globe-holder if so ordered. Holders are wired and have offset and slotted cross bar.

The glassware is of proper density to deliver a maximum of diffused light without showing the filament of the lamp.

Complete units packed in individual cartons and enclosed in a larger carton for shipment. Holders without glass are packed twelve in a carton.

Plug-in-Switch

The Plug-in-Switch is moulded composition and consists of a pendant switch to control the light combined with a convenience outlet that is always alive. It hangs just overhead in the center of the room where electric iron or other appliance may be easily attached whether light is on or off.

A three conductor silk covered cord connects the Plug-in-Switch to the holder and is of sufficient length to permit adjustment for various heights of ceiling up to ten feet.

With Plug-in-Switch

Cat. No.	Holder	Globe	Shipping Weight	
			Per Doz.	Price Each
400C	8½x4	8⅝x4	70 lbs.	\$6.25
400	8½x4	no glass	31 lbs.	4.60

With Pull Socket

Cat. No.	Holder	Globe	Shipping Weight	
			Per Doz.	Price Each
401C	8½x4	8⅝x4	68 lbs.	\$5.50
401	8½x4	no glass	28 lbs.	3.85

With Keyless Socket

Cat. No.	Holder	Globe	Shipping Weight	
			Per Doz.	Price Each
402C	8½x4	8⅝x4	67 lbs.	\$4.40
402	8½x4	no glass	27 lbs.	2.75

Class D



Outlet-Box Receptacles

For 4 inch and 3 inch Outlet Boxes

The Quad Receptacle is neat in appearance and of such size as to take little room in the box. Porcelain is keyed to the 14 gauge iron cover by two galvanized clips so that it can not loosen or turn.

The screw shell and spring lamp contact are riveted to the porcelain and sealed with compound. Wire leads are 6 inches long and soldered to make good mechanical and electrical contact. Takes standard 2 1/4 and 3 1/4-inch shade-holders for porcelain sockets.

Approved by the Underwriters' Laboratories. Rating 660 watts, 600 volts.



Flat Cover with Leads

Flat Cover Receptacles

Soldered Wire Leads

Catalog No.	Diam.	Finish	Wire Leads	Price
41	4 1/4"	Black Japanned	New Code	\$0.33
31	3 1/2"	Black Japanned	New Code	.31
41A	4 1/4"	Black Japanned	Slow Burning	.34
31A	3 1/2"	Black Japanned	Slow Burning	.32
41G	4 1/4"	Galvanized	New Code	.34
31G	3 1/2"	Galvanized	New Code	.32
41AG	4 1/4"	Galvanized	Slow Burning	.35
31AG	3 1/2"	Galvanized	Slow Burning	.33



Flat Cover with Screw Terminals

With Screw Terminals

Catalog No.	Diam.	Finish	Price
43	4 1/4"	Black Japanned	\$0.32
33	3 1/2"	Black Japanned	.30
43G	4 1/4"	Galvanized	.33
33G	3 1/2"	Galvanized	.31

Raised Cover Receptacles

These receptacles are similar to those above except that the covers instead of being flat are offset 5/8 inch to provide more room in the box. The 3 1/2-inch diameter raised cover is especially useful as the smaller boxes are often crowded with wires.



Raised Cover with Leads

Soldered Wire Leads

Catalog No.	Diam.	Finish	Wire Leads	Price
40	4"	Black Japanned	New Code	\$0.35
30	3 1/2"	Black Japanned	New Code	.33
40A	4"	Black Japanned	Slow Burning	.36
30A	3 1/2"	Black Japanned	Slow Burning	.34
40G	4"	Galvanized	New Code	.36
30G	3 1/2"	Galvanized	New Code	.34
40AG	4"	Galvanized	Slow Burning	.37
30AG	3 1/2"	Galvanized	Slow Burning	.35



Raised Cover with Screw Terminals

Screw Terminals

Catalog No.	Diam.	Finish	Price
42	4"	Black Japanned	\$0.34
32	3 1/2"	Black Japanned	.32
42G	4"	Galvanized	.35
32G	3 1/2"	Galvanized	.33

Prices on Quad Receptacles for Square, Rectangular and Special boxes on request.

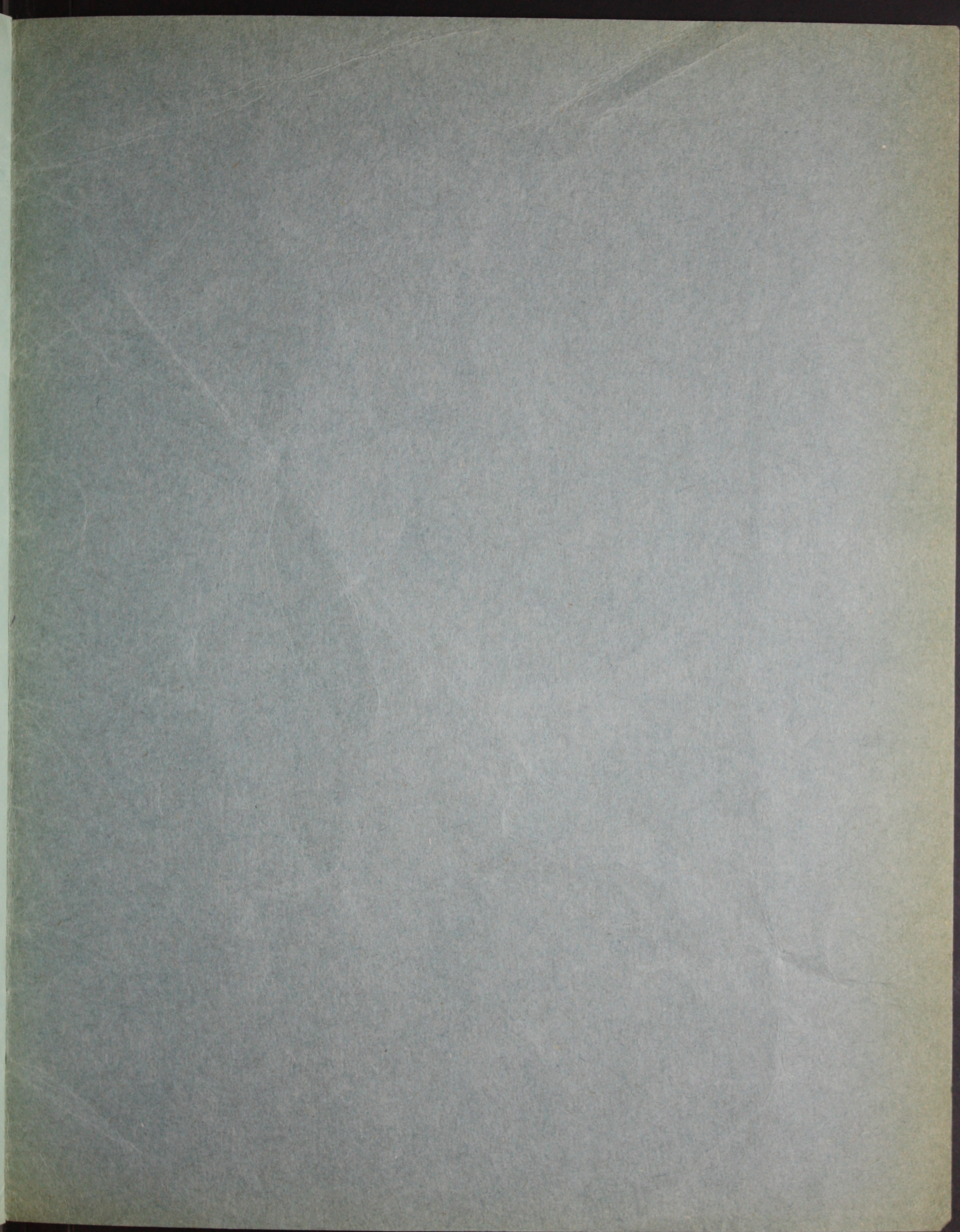
Class C

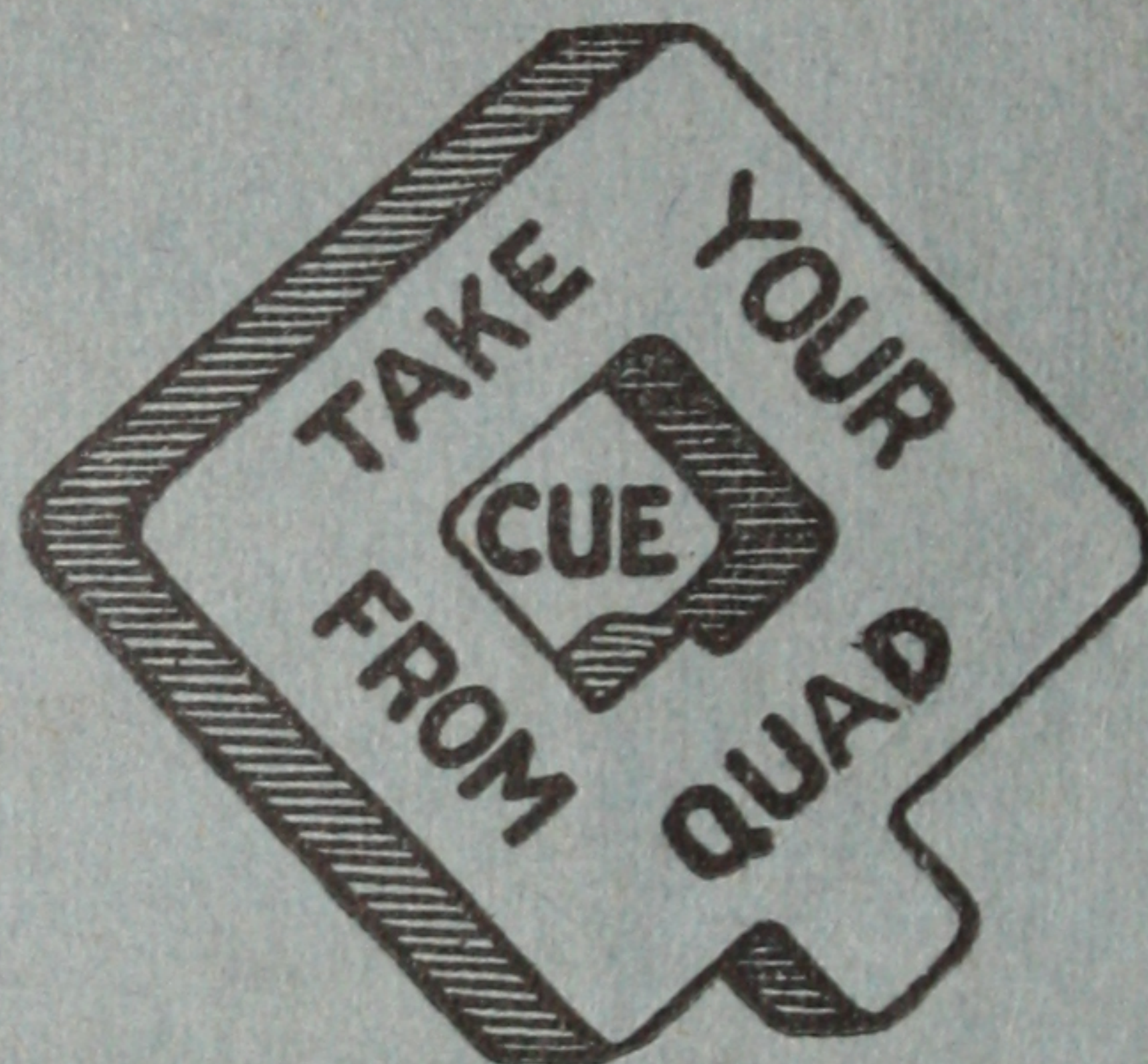


NUMERICAL INDEX

Cat. No.	Name	Page	Class	Price
30	Receptacle.....	18	C	\$0.33
30A	Receptacle.....	18	C	.34
30G	Receptacle.....	18	C	.34
30AG	Receptacle.....	18	C	.35
31	Receptacle.....	18	C	.31
31A	Receptacle.....	18	C	.32
31G	Receptacle.....	18	C	.32
31AG	Receptacle.....	18	C	.33
32	Receptacle.....	18	C	.32
32G	Receptacle.....	18	C	.33
33	Receptacle.....	18	C	.30
33G	Receptacle.....	18	C	.31
35	Mogul Socket.....	14	C	.75
36	Medium Socket.....	14	C	.70
37	Hickey.....	14	C	.10
38	Hickey.....	14	C	.15
40	Receptacle.....	18	C	.35
40A	Receptacle.....	18	C	.36
40G	Receptacle.....	18	C	.36
40AG	Receptacle.....	18	C	.37
41	Receptacle.....	18	C	.33
41A	Receptacle.....	18	C	.34
41G	Receptacle.....	18	C	.34
41AG	Receptacle.....	18	C	.35
42	Receptacle.....	18	C	.34
42G	Receptacle.....	18	C	.35
43	Receptacle.....	18	C	.32
43G	Receptacle.....	18	C	.33
45	Swivel Hangers.....	13	B	.45
45G	Swivel Hangers.....	13	B	.50
54	Bushed Hanger.....	13	B	\$0.40
63	Gooseneck.....	13	B	.80
64	Wall Flange.....	13	B	.35
65	Pole Flange.....	13	B	.35
66	Outlet Box Cover.....	13	B	.15
106	Chain Hanger.....	15	A	3.20
112	RLM Socket Reflector	6	B	2.85
114	RLM Socket Reflector	6	B	3.05
116	RLM Socket Reflector	6	B	3.70
118M	RLM Socket Reflector	6	B	4.65
120M	RLM Socket Reflector	6	B	6.20
145G	Swivel Hanger.....	13	C	.35
145GA	Swivel Shock Absbr.	13	C	.60
207	Deep Bowl Skt. Refl.	9	B	2.25
208	Deep Bowl Skt. Refl.	9	B	2.55
210	Deep Bowl Skt. Refl.	9	B	3.20
212M	Deep Bowl Skt. Refl.	9	B	4.00
312	Shal. Bowl Skt. Refl.	7	B	2.55
314	Shal. Bowl Skt. Refl.	7	B	2.90
316	Shal. Bowl Skt. Refl.	7	B	3.35
400	Kitchen Unit.....	17	D	4.60
400C	Kitchen Unit.....	17	D	6.25
401	Kitchen Unit.....	17	D	3.85
401C	Kitchen Unit.....	17	D	5.50
402	Kitchen Unit.....	17	D	2.75
402C	Kitchen Unit.....	17	D	4.40
414	Flat Cone Skt. Refl...	8	B	2.75
416	Flat Cone Skt. Refl...	8	B	3.00
418	Flat Cone Skt. Refl...	8	B	3.40
418M	Flat Cone Skt. Refl...	8	B	3.90

Cat. No.	Name	Page	Class	Price
508	Angle Socket Refl.....	10	B	\$2.50
510	Angle Socket Refl.....	10	B	3.35
512	Angle Socket Refl.....	10	B	3.60
514	Angle Socket Refl.....	10	B	5.15
514M	Angle Socket Refl.....	10	B	5.65
527	Half Shade Bracket....	16	A	2.30
537	Open Shade Unit.....	16	A	2.30
1041	Chain Pendant.....	15	A	5.25
1044	Ceiling Unit.....	15	A	4.60
1047	Ceiling Unit.....	16	A	4.15
1120	RLM Fitter Type Refl.	6	B	1.60
1121	RLM Thrd. Type Refl.	6	B	1.70
1140	RLM Fitter Type Refl.	6	B	1.90
1141	RLM Thrd. Type Refl.	6	B	2.00
1160	RLM Fitter Type Refl.	6	B	2.25
1161	RLM Thrd. Type Refl.	6	B	2.35
1241	Chain Pendant.....	15	A	6.40
1244	Ceiling Unit.....	15	A	5.75
1247	Ceiling Unit.....	16	A	5.30
1441	Chain Pendant.....	15	A	7.55
1444	Ceiling Unit.....	15	A	7.25
1447	Ceiling Unit.....	16	A	6.65
1631	Chain Pendant.....	14	A	11.50
1631M	Chain Pendant.....	14	A	12.00
1634	Ceiling Unit.....	14	A	11.25
1634M	Ceiling Unit.....	14	A	11.75
1641M	Chain Pendant.....	15	A	8.75
1644M	Ceiling Unit.....	15	A	8.90
1647M	Ceiling Unit.....	16	A	8.40
2000	Flush Reflector.....	12	B	2.25
2012	Outlet Box Reflector..	12	B	1.95
2070	Deep Bowl Fitter Refl.	9	B	\$1.20
2071	Deep Bowl Thrd. Refl.	9	B	1.30
2080	Deep Bowl Fitter Refl.	9	B	1.30
2081	Deep Bowl Thrd. Refl.	9	B	1.40
2100	Deep Bowl Fitter Refl.	9	B	1.80
2101	Deep Bowl Thrd. Refl.	9	B	1.90
3100	Shal. Bowl Fitter Refl.	7	B	1.05
3101	Shal. Bowl Thrd. Refl.	7	B	1.20
3120	Shal. Bowl Fitter Refl.	7	B	1.35
3121	Shal. Bowl Thrd. Refl.	7	B	1.45
3140	Shal. Bowl Fitter Refl.	7	B	1.85
3141	Shal. Bowl Thrd. Refl.	7	B	1.95
3160	Shal. Bowl Fitter Refl.	7	B	2.20
3161	Shal. Bowl Thrd. Refl.	7	B	2.30
4000	Flush Reflector.....	12	B	2.60
4014	Outlet Box Reflector..	12	B	2.25
4120	Flat Cone Fitter Refl.	8	B	1.35
4121	Flat Cone Thrd. Refl.	8	B	1.45
4140	Flat Cone Fitter Refl.	8	B	1.85
4141	Flat Cone Thrd. Refl.	8	B	1.95
4160	Flat Cone Fitter Refl.	8	B	2.20
4161	Flat Cone Thrd. Refl.	8	B	2.30
5100	Angle Fitter Reflector	10	B	1.50
5101	Angle Thrd. Reflector	10	B	1.60
5120	Angle Fitter Reflector	10	B	2.00
5121	Angle Thrd. Reflector	10	B	2.10
5140	Angle Fitter Reflector	10	B	2.50
5141	Angle Thrd. Reflector	10	B	2.60
6000	Flush Reflector.....	12	B	3.50
6014	Outlet Box Reflector ..	12	B	2.60





TRADE MARK

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